Prepared For:
Village of Nelsonville
258 Main Street
Nelsonville, NY 10516

Submitted by:
LaBella Associates
1 North Broadway
Suite 803
White Plains, NY 10601

LaBella
Powered by partnership.

Village of Nelsonville Sanitary Sewer Collection System Feasibility and Grant Funding Study

DECEMBER 18, 2023
2231722.00

\\B:\Projects\Nelsonville, Village Of\2231722 - Feasibility & Grant Funding Study\11_Reports\2231722_V.Nelsonville_Feasibility Study_12.2023.Docx

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

APPENDICES

1 EXECUTIVE SUMMARY

The purpose of this feasibility study (Study) is to present a proposed design of a sanitary sewer collection system for the Village of Nelsonville (Village), Putnam County, New York, and its connection to the existing Cold Spring sanitary sewer system and wastewater treatment plant (Project).

This Study includes the:

- Description of the existing Village on-site sewage system and removal processes,
- Investigation of the proposed Cold Spring sanitary sewer system connection,
- Description and comparison of alternatives for the proposed sanitary sewer system and connection,
- Opinion of probable construction costs,
- Recommended alternative,
- Required permits and approval, and
- Explanation of potential funding sources.

2. PROJECT BACKGROUND

2.1 Site Information

2.1.1 Location

The Village is located within the Town of Philipstown and borders the Village of Cold Spring (Cold Spring) to the southwest. The Village is in a valley, within the low point of the watershed bounded by multiple hills, the largest being Bull Hill, with a peak of 1,421 feet above sea level (ASL), as seen in Figures 2.1 and 2.2. The Project area is within the Village covering approximately 60.4 acres (Project Area) along State Route 301 (Main Street). The Project Area has elevations ranging from more than 235 to 170 feet ASL. Refer to Figure 2.3 for the Project Area and Vicinity Map.

2.1.2 Geologic Conditions

The United States Department of Agriculture (USDA) Soil Conservation Service (SCS) Soil Survey of Putnam County, New York was used to obtain the primary surficial soil conditions for the Village and seen in the abbreviated table below:

Table 2-1:
USDA Soil Data for the Village of Nelsonville

Map Symbol & Description	Hydrologic Soil Group	Permeability (inches/hour)	Depth to Water Table (inches)	Depth to Bedrock (inches)
ChB – Charlton fine sandy loam	B	0.14 - 14.17	>80	>80
CIB – Charlton fine sandy loam	B	0.14 - 14.17	>80	>80
CIC – Charlton fine sandy loam	B	0.14 - 14.17	>80	>80
CID – Charlton Loam	B	0.57 - 5.95	>80	>80
CsD – Chatfield-Charlton complex	B	0.0 - 0.0	>80	20 - 41
CuD – Chatfield- Hollis-Rock outcrop complex	B	0.0 - 0.0	>80	20 - 41
LeB – Leicaster loam	A/D	0.57 – 5.95	6 - 18	>80

The United States Geological Survey (USGS) defines the soil groups as follows:

- Type A Soils: Soils having a high infiltration rate and low runoff potential when thoroughly wet. These soils consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.
- Type B Soils: Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained, or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of transmission.

USGS Quadrangle Map

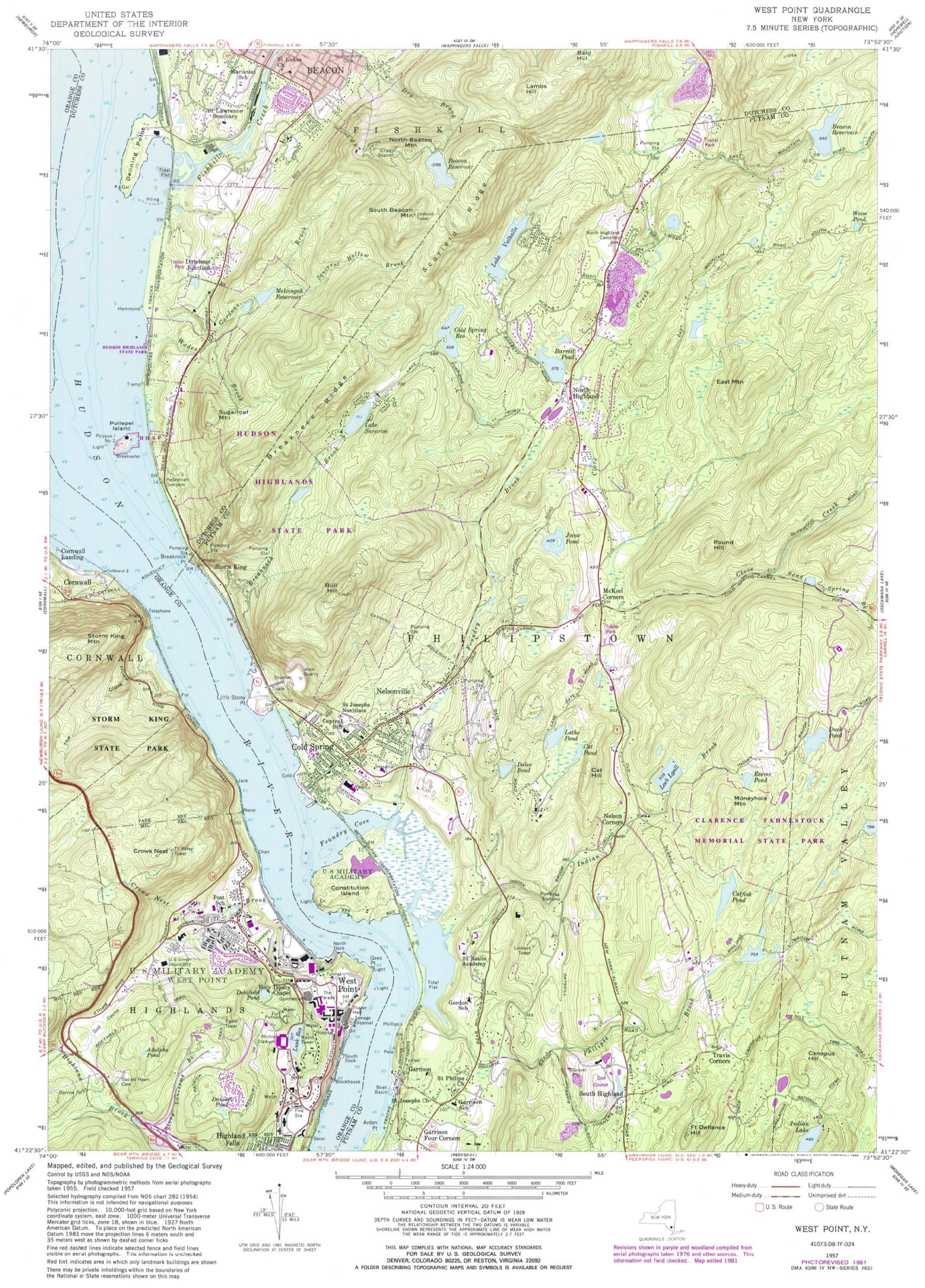
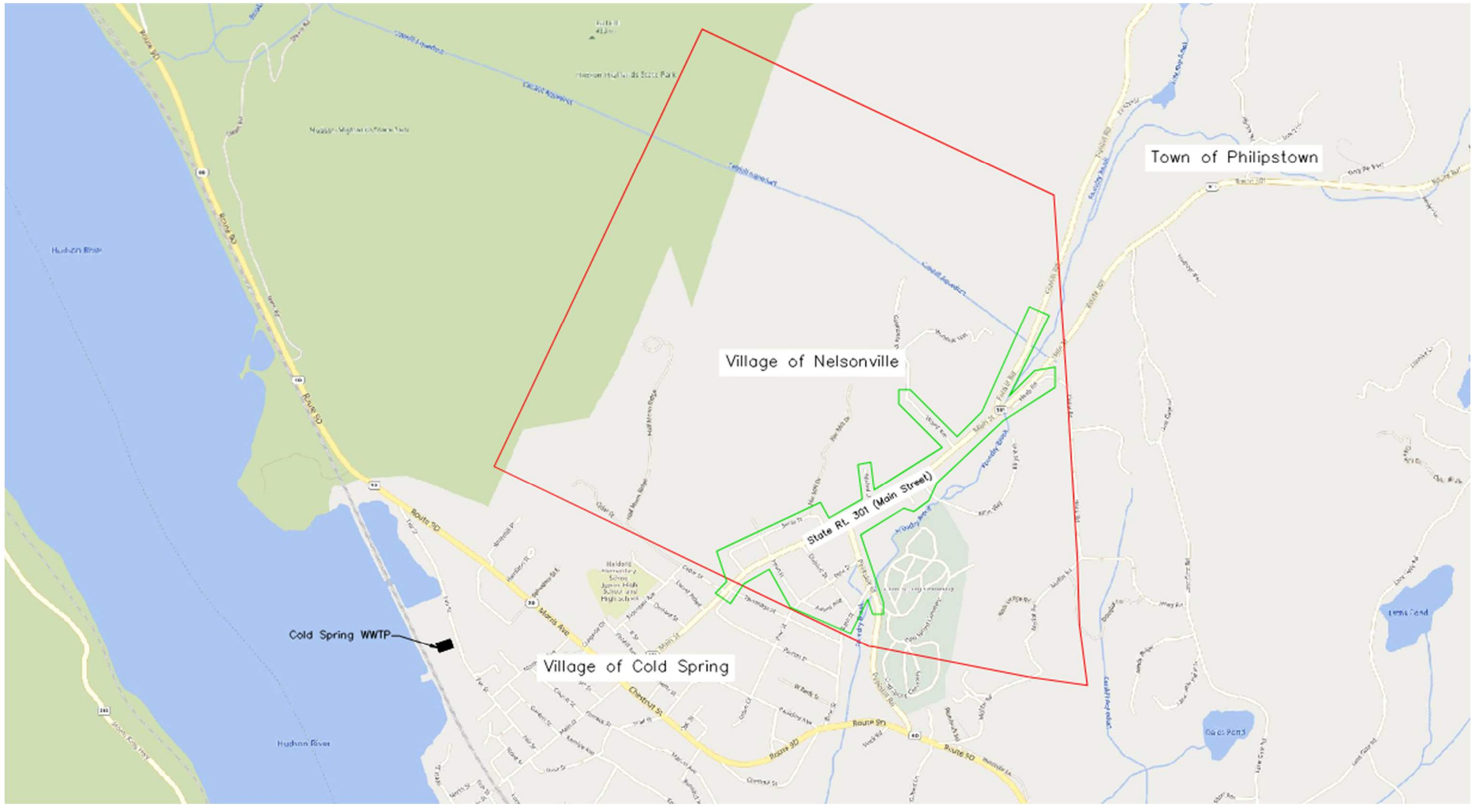


Figure 2.1

USGS Quadrangle Map – Focused on the Village of Nelsonville

Figure 2.2



Project Area and Vicinity Map

Figure 2.3

Village of Nelsonville Sanitary Sewer Collection System
Feasibility and Funding Study

LaBella
Powered by partnership.

- Type C Soils: Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.
- Type D Soils: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

2.1.3 Environmental Resources

According to the New York State Department of Environmental Conservation's (NYSDEC) Environmental Resource Mapper, portions of the Project Area are located within a state regulated wetland check zone surrounding a regulated freshwater forested/shrub wetland. One nearby wetland is along Foundry Brook, running parallel to State Route 301. A secondary wetland is to the north of the Project Area, along an unnamed tributary of Foundry Brook. Refer to Appendix A for the Environmental Resource Maps. If aquatic resources are found in the Project Area, LaBella biologists will complete a delineation of aquatic resources and prepare a report describing them to support a preliminary jurisdictional determination (PJD) for submission to the NY District of the U.S. Army Corps of Engineers (USACE), and a request for map validation by the NYSDEC, if needed. All surveying will be completed in accordance with the "Code of Practice" as adopted by the New York State Association of Professional Land Surveyors.

Additionally, the Project Area is within the vicinity of animal species listed as Endangered or Threatened, including bats. Construction projects will require consultation with the NYSDEC prior to commencement of work.

2.1.4 Floodplain Considerations

According to the National Flood Insurance Program Flood Insurance Rate Map (FIRM), a portion of the Village along Foundry Brook is located within Zone AE, which is subject to inundation by the 1-percent-annual-chance flood event. Refer to Appendix B for the FIRMs depicting the flood plains in the Village.

2.2 Ownership and Service Area

The Village was incorporated in 1855 by the State of New York. As of the 2020 Census, the Village had a population of 624. The Village currently has 171 customer connections to the Cold Spring water distribution system. The Village currently does not have a public sanitary sewer system and relies on privately owned cesspools, septic tanks, and leech fields for wastewater treatment and disposal.

The Village is mostly comprised of single- and multi-family residential properties. The non-residential properties include restaurants, churches, retail stores, a fuel supply company, and auto repair shops. The government buildings include a county sheriff's substation and Village Hall. The Village does not have any industrial properties.

2.2.1 Population Trends and Growth

The population of the Village is shown in Table 2-2 (US Census Bureau). The population of the Village has maintained consistent growth at approximately 0.89% per year since 2000. At this time there are no planned large developments in the Village that would affect the projected population.

Table 2-2:
Population Data

	2000 Census	2010 Census	2020 Census	2040 Projection
Population	563	628	624	692

3. EXISTING FACILITIES AND PRESENT CONDITIONS

3.1 Village of Nelsonville

The Village currently does not have an existing wastewater collection system. To contain or treat wastewater, each property currently uses cesspools or septic tank and leach field systems that are periodically pumped. The Village is expected to have comparable wastewater effluent properties to Cold Spring's current wastewater due to the similar demographics and population densities. The Village is expected to have 171 connections to the sanitary sewer collection system with an estimated 80,000 gallons per day (GPD) of wastewater generated.

3.2 Village of Cold Spring

The Cold Spring sanitary sewer system was originally installed the early 1900s, since this time annual condition assessments and evaluations have been used to maintain and improvement the existing system. Cold Spring's sanitary sewer system conveys wastewater in a 10-inch diameter trunk sewer along Main Street and Garden Street to the Cold Spring Wastewater Treatment Plant (WWTP) on Fair Street. This section of main was inspected in 2019 by Cold Spring staff.

A 2010 Draft Report on the existing sanitary sewer system infrastructure indicates that the system remains "fairly intact, with no clogging or backup issues that would indicate major blockages". Past breaks and blockages have had video inspections and been repaired.

The WWTP was originally constructed in 1972, and since its construction, many of its pumps and blowers have been upgraded. Currently, the WWTP has a treatment capacity of 500,000 GPD and an average treated flow of approximately 290,000 GPD, with a current excess capacity of 210,000 GPD.

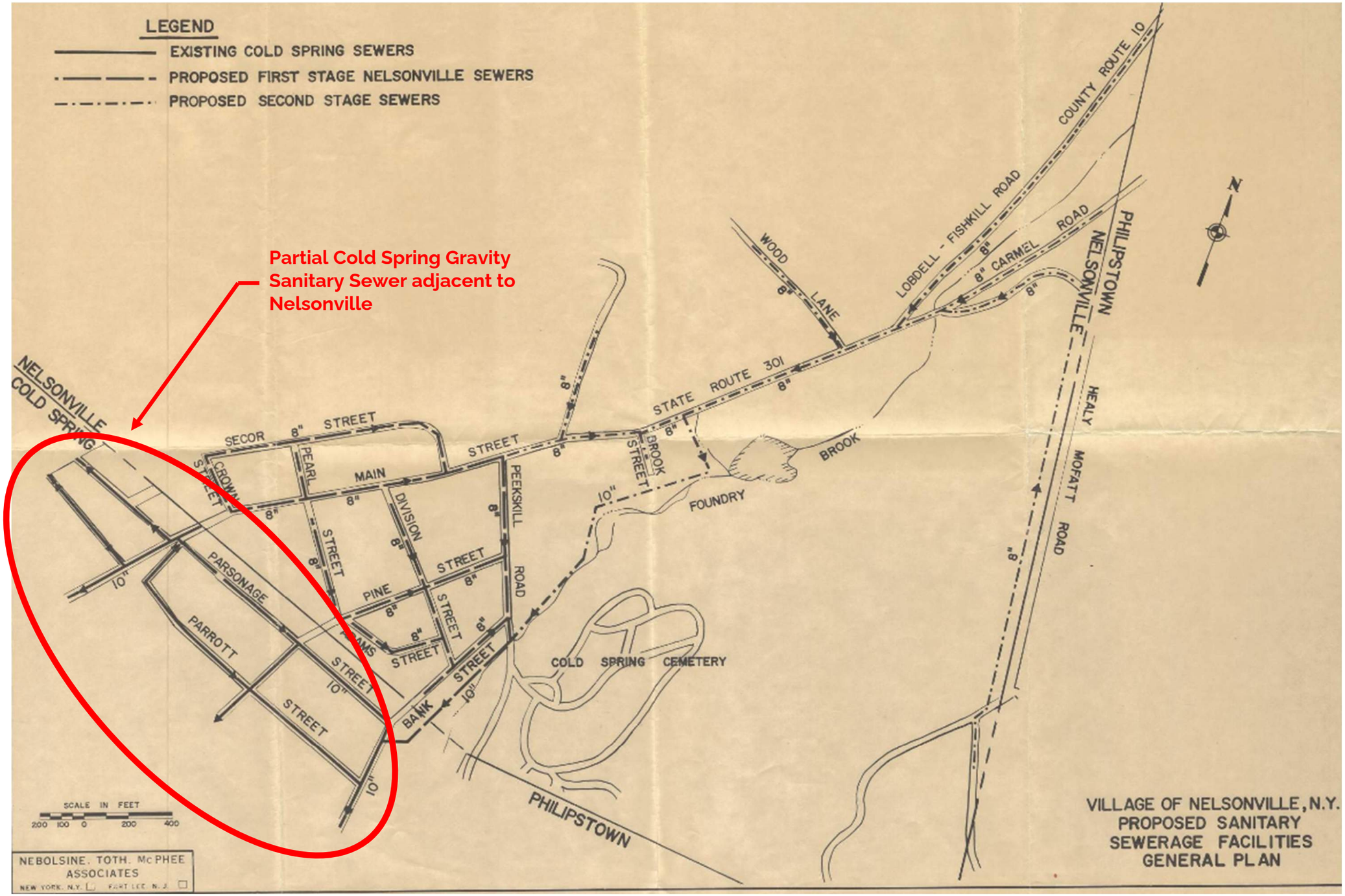
3.2.1 Cold Spring System Deficiencies

A Draft Drinking Water, Sewer, and Stormwater Infrastructure Report (Henderson, 2010) identified system deficiencies. While Cold Spring maintains separate stormwater and wastewater collection systems, the report stated that "there is a major problem caused by inflow and infiltration of stormwater in the wastewater collection system". And that the influent WWTP flows can "spike to 760,000 gallons per day during heavy rains, leading to a violation condition where the effluent does not meet the required standards", per the State Pollutant Discharge Elimination System (SPDES) permit.

The report also noted that the WWTP solid waste removal auger has displayed problems with blockages due to insufficient influent pressure. During this time, the auger was bypassed, and a manual screen implemented during this time.

3.3 Definition of the Problem

The Village currently does not have an existing wastewater collection system. To contain or treat wastewater, each property currently uses cesspools or septic tank and leach field systems that are periodically pumped. The Village is in a valley and experiences poor stormwater drainage, potential leaching from the existing cesspools can occur. The Village



Village of Cold Spring –
Existing Sanitary Sewer Collection System

Figure 3.1

generally has lot sizes that range from 0.16 acres to 0.6 acres with many multifamily residences, prohibiting the adequate disposal and handling of their wastewater. If the existing wastewater treatment and disposal systems are not maintained properly, this can cause excess nitrogen contamination of the surrounding surface or groundwater sources, negatively affecting public health. This Project will address protecting water quality and environmental health concerns from potential failure of the on-site systems due to the aging homes and on-site wastewater infrastructure. A wastewater collection system will allow the Village to eliminate the use of these cesspools and septic tanks. The Cold Spring WWTP has the capacity to handle the wastewater from the Village.

3.4 Financial Status

The Village sanitary sewer system will have approximately 171 service connections. The usage data from the existing potable water meters will be used to determine wastewater service billing once the system is implemented.

4. ALTERNATIVES ANALYSIS

4.1 Description

Four alternatives were evaluated for the Village:

1.) Alternative 1 – "No Action"
2.) Alternative 2 – Conventional Gravity System with Trunk Sewer
3.) Alternative 3 – Conventional Gravity System with Lift Stations
4.) Alternative 4 – Low Pressure Sewer System

4.2 Alternative 1 – No Action

The "no action" alternative entails making no changes to the current wastewater treatment and disposal systems in the Village, making the property owner responsible for the correct handling of any wastewater generated. This action will not address the current wastewater problems in the Village. Therefore, the "no action" alternative is not a viable alternative for the Village.

4.3 Alternative 2 – Conventional Gravity System with Trunk Sewer

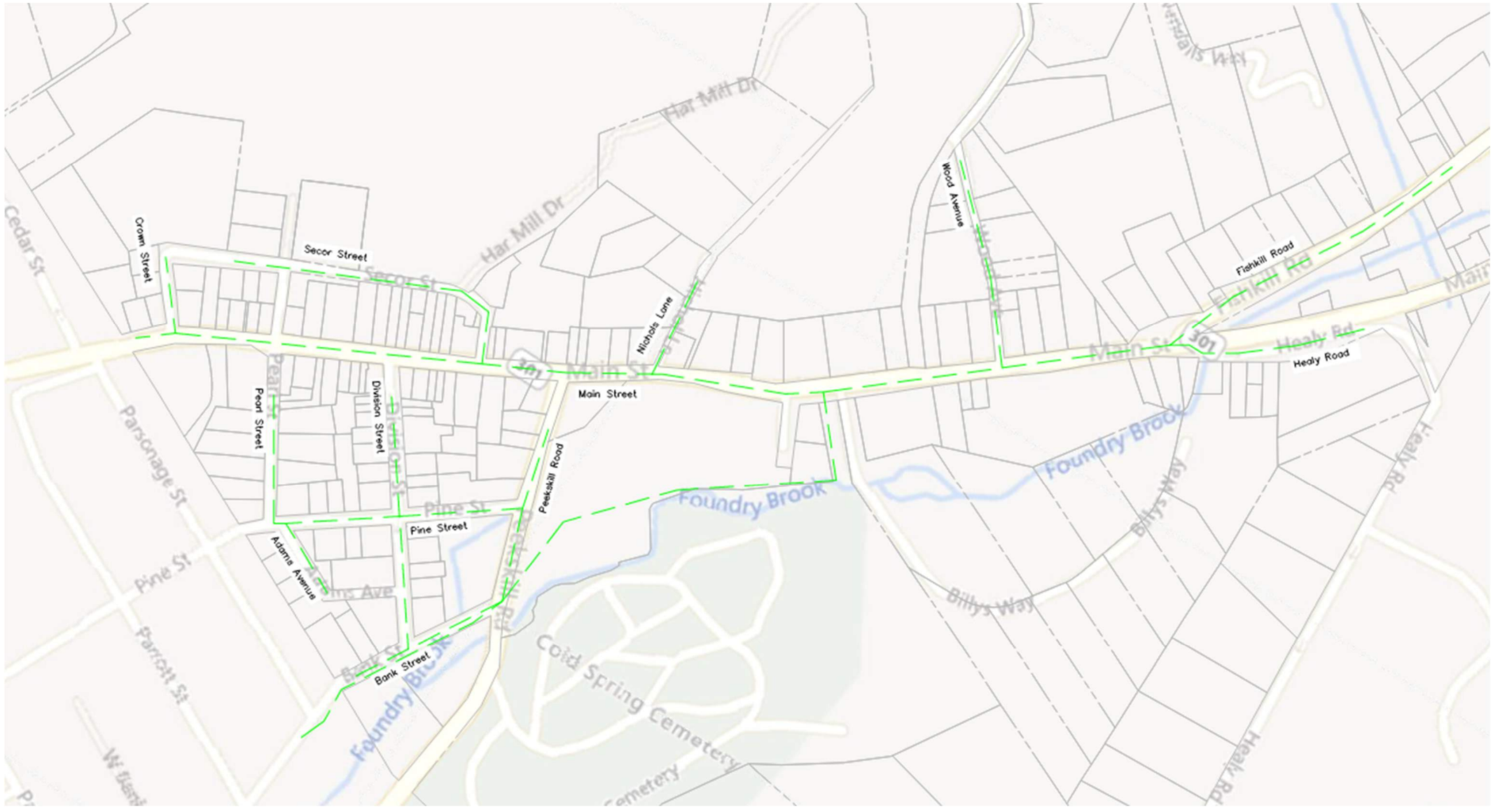
This alternative includes the installation of a conventional gravity sewer collection system into a trunk sewer. The trunk sewer would be a large diameter pipe to transfer the wastewater from multiple collectors. The trunk sewer would connect to the existing Cold Spring wastewater collection system on Bank Street, and eventually the WWTP.

There would be approximately 11,000 linear feet (LF) of 8-inch polyvinyl chloride (PVC) gravity sanitary sewer pipe installed across the Village via a combination of conventional open trenching and directional drilling. From the convergence points of the collectors, 2,400 LF of 10-inch high-density polyethylene (HDPE) pipe to the point of connection with Cold Spring. Refer to Figure 4.1 for preliminary system layout.

After an analysis of the feasibility of this alternative, it was determined that due to the existing topography, and the minimum design criteria listed in Table 4-1, a gravity only system is not feasible.

Table 4-1:
Ten States Standards Minimum Design Criteria for Sanitary Sewers

Pipe Diameter (inches)	Slope (% rise/run)	Velocity (feet per second)	Bury Depth (feet)
8	0.4	2.0	9.0
12	0.22	2.0	9.0



Alternative 2 –
Conventional Gravity System with Trunk Sewer

Figure 4.1

Village of Nelsonville Sanitary Sewer Collection System
Feasibility and Funding Study

LaBella
Powered by partnership.

4.4 Alternative 3 – Conventional Gravity System with Lift Stations

Alternative 3 includes the installation of a conventional gravity sewer collection system that would convey wastewater to two (2) lift stations. The wastewater would then be pumped up and connect to the existing Cold Spring sanitary sewer system on Main Street. The lift stations consist of two (2) pumps at the bottom of a wet well that pump wastewater through a pressurized force main to higher elevations.

There would be approximately 11,000 LF of 8-inch PVC gravity sanitary sewer pipe installed across the Village via a combination of conventional open trenching and directional drilling to the lift stations. One (1) should be located near Main Street and Billy's Way and the second near Peekskill Road and Bank Street. Discharging from the two (2) lift stations, approximately 4,800 LF of 4- or 6-inch HDPE force main pipe would be installed on Main Street and Peekskill Road to the point of connection on Main Street in Cold Spring. Refer to Figure 4.2 for preliminary system layout.

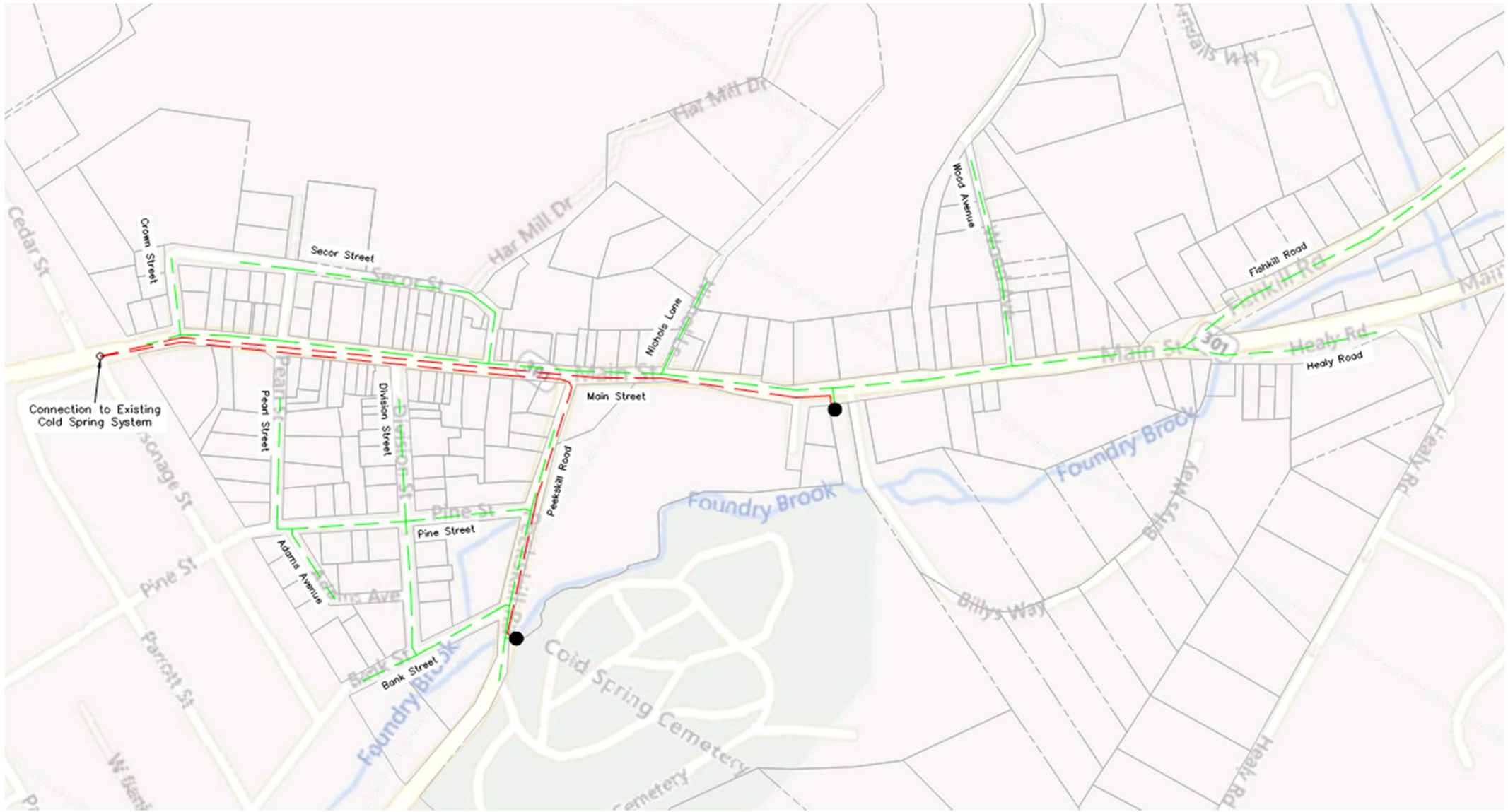
By connecting the lift stations to the existing Cold Spring system through a force main, the wastewater can be effectively transported against the topography to the WWTP for processing. Due to required minimum pipe depths, the existing topography in the Project area, and soil conditions the cost to install and maintain gravity sewers are more costly.

4.5 Alternative 4 – Low-Pressure Sewer System

A low-pressure sewer collection system is a type of sanitary sewer system that utilizes individual grinder pumps in pump vaults to transport wastewater from individual users to a collection sewer main. Each grinder pump grinds solid waste and pumps the wastewater into the pressurized sewer main, which conveys the wastewater to a central collection point or an existing gravity sewer system. This system includes alarm systems to detect any issues or malfunctions with the pump vaults.

The implementation of this system would include the installation of approximately 12,000 LF of 1 1/2- to 3-inch of low-pressure sewer main. In addition, this system would involve the installation of a grinder pump vault for each of the 171 users in the system. These vaults would need easements for each one as they would be maintained by the Village or the Cold Spring Wastewater Department. Refer to Figure 4.3 for the preliminary system layout.

The low-pressure sewer main can be installed at a shallower depth than a conventional gravity system, minimizing extensive excavation and construction required, and are a smaller diameter, resulting in a lower installation cost.

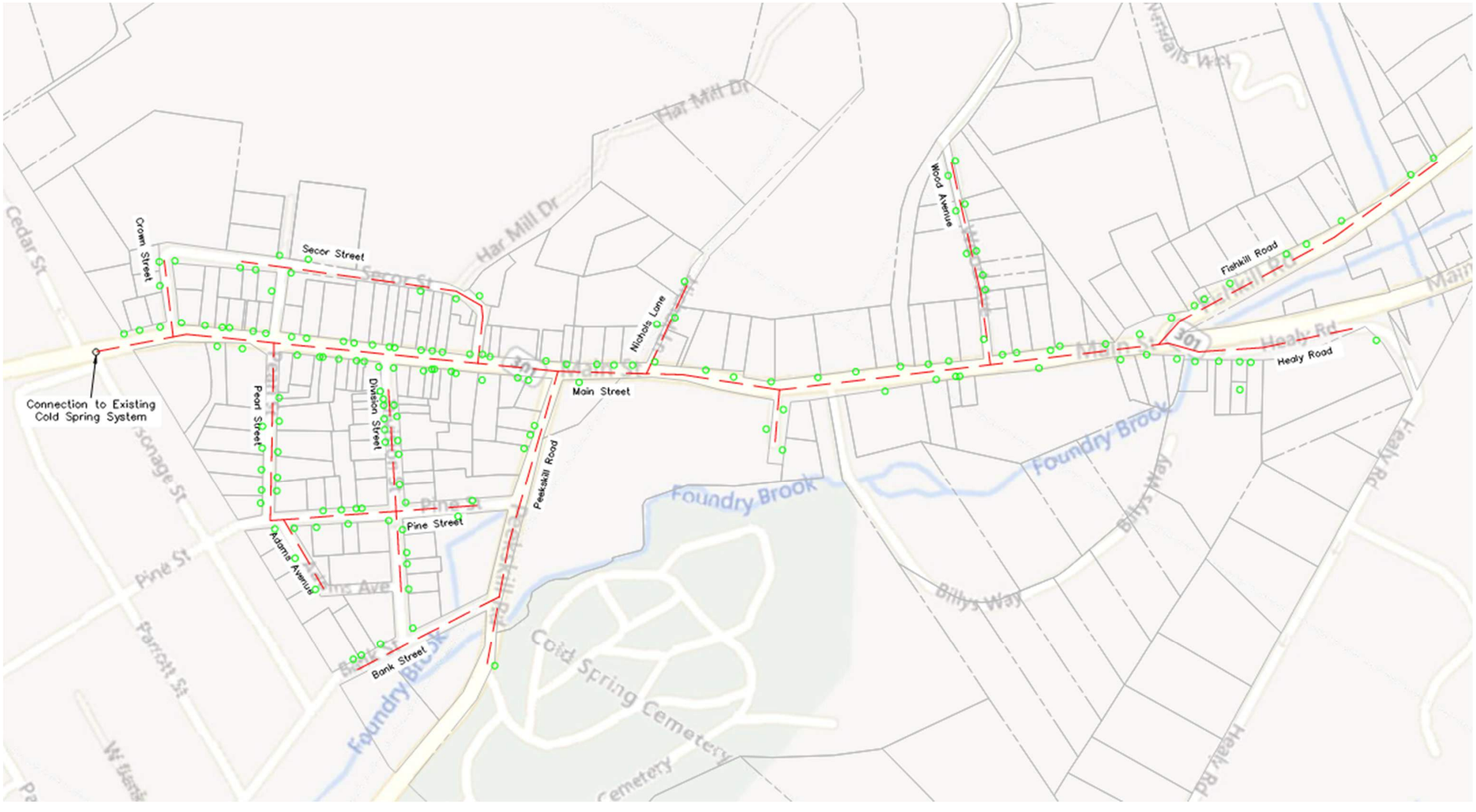


Alternative 2 –
Conventional Gravity System with Lift Stations

Figure 4.2

Village of Nelsonville Sanitary Sewer Collection System
Feasibility and Funding Study

LaBella
Powered by partnership.



Alternative 3 –
Low-Pressure Sewer System

Figure 4.3

Village of Nelsonville Sanitary Sewer Collection System
Feasibility and Funding Study

LaBella
Powered by partnership.

4.6 Engineer's Opinions of Probable Construction Costs

4.6.1 Alternative 1 – "No Action"

The "no action" alternative carries no associated costs beyond the potential adverse environmental effects.

4.6.2 Alternative 2 – Conventional Gravity System with Trunk Sewer

An Opinion of Probable Construction Costs is summarized in the table below:

Table 4-2:
EOPCC for Alternative 2

Item No.	Description	Unit	Quantity	Cost	Total
1	Mobilization & Demobilization	LS	1	$380,000	$380,000
2	PVC Sewer Collector Pipe	LF	11,000	$225	$2,475,000
3	PVC Trunk Sewer Main	LF	2,400	$250	$600,000
4	Sewer Manhole Installation	EA	60	$12,500	$750,000
5	Erosion & Sediment Control	LS	1	$20,000	$20,000
6	Site Restoration	LS	1	$25,000	$25,000
7	Maintenance & Protection of Traffic	LS	1	$50,000	$50,000
Subtotal					$4,300,000
Contingency (30%)					$1,290,000
Total Construction Cost					$5,590,000
Engineering (25%)					$1,397,000
Construction Administration & Inspection					$559,000
Total Estimated Project Cost					**$7,546,000**

4.6.3 Alternative 3 – Conventional Gravity System with Lift Stations

An Opinion of Probable Construction Costs is summarized in the table below:

Table 4-3:
EOPCC for Alternative 3

Item No.	Description	Unit	Quantity	Cost	Total
1	Mobilization & Demobilization	LS	1	$440,000	$440,000
2	PVC Sewer Collector Pipe	LF	11,000	$225	$2,475,000
3	HDPE Force Main	LF	4,800	$200	$960,000
4	Sewer Manhole Installation	EA	50	$12,500	$625,000
5	Erosion & Sediment Control	LS	1	$20,000	$20,000
6	Site Restoration	LS	1	$20,000	$20,000
7	Maintenance & Protection of Traffic	LS	1	$50,000	$50,000
8	Installation of Pump Station	EA	2	$300,000	$600,000
Subtotal					$5,190,000
Contingency (30%)					$1,557,000
Total Construction Cost					$6,747,000
Engineering (25%)					$1,687,000
Construction Administration & Inspection					$675,000
Total Estimated Project Cost					**$9,109,000**

4.6.4 Alternative 4 – Low-Pressure Sewer System

An Opinion of Probable Construction Costs is summarized in the table below:

Table 4-4:
EOPCC for Alternative 4

Item No.	Description	Unit	Quantity	Cost	Total
1	Mobilization & Demobilization	LS	1	$300,000	$300,000
2	Low-Pressure Pipe	LF	12,000	$175	$2,100,000
3	Individual Grinder Pump Systems	EA	171	$7,000	$1,197,000
4	Erosion & Sediment Control	LS	1	$20,000	$20,000
5	Site Restoration	LS	1	$40,000	$40,000
6	Maintenance & Protection of Traffic	LS	1	$50,000	$50,000
Subtotal					$3,707,000
Contingency (30%)					$1,113,000
Total Construction Cost					$4,820,000
Engineering (25%)					$1,205,000
Construction Administration & Inspection					$482,000
Total Estimated Project Cost					**$6,507,000**

4.7 Summary and Comparison of Alternatives

The four alternatives associated with the development of a wastewater system for the Village are summarized as follows:

1.) Alternative 1 – The "no action" alternative entails making no changes to the current wastewater treatment and disposal systems in the Village. This action will not address the current wastewater problems in the Village. Therefore, the "no action" alternative is not a viable alternative.

2.) Alternative 2 – This alternative involves the installation of a conventional gravity sewer system and trunk sewer main to collect and convey wastewater to Cold Spring. This alternative is not a viable option due to the existing topography, soils conditions, and design restrictions.

3.) Alternative 3 – This alternative involves the installation of a conventional gravity sewer system with lift stations. While this alternative addresses the hilly terrain, it is not recommended due to the high construction and maintenance costs.

4.) Alternative 4 – This alternative involves the installation of a low-pressure sewer system. This type of system allows for smaller diameter pipes installed at shallower depths than a conventional gravity system, minimizing excavation and construction efforts, resulting in lower installation costs.

5. RECOMMENDED ALTERNATIVE

5.1 Basis of Selection

The recommended alternative for disposal and treatment of wastewater for the Village is Alternative 4. This alternative provides the Village with a reliable wastewater collection and disposal solution, removing the need for the reliance on privately owned cesspools and septic tanks. The Cold Spring WWTP has the excess capacity of 210,000 GPD to handle the estimated 80,000 GPD wastewater production from the Village. The improvements proposed by Alternative 4 will be expected to cost $6,507,000.

5.2 Project Schedule

To be determined based on project funding and Section 6.3.

5.3 Next Steps

The following approvals are required for the construction of the recommended Alternative 4:

1.) Grant Funding
2.) Basis of Design Report
3.) Additional Grant Funding
4.) Engineering Design
5.) Construction

6. FUNDING STRATEGIES

State and Federal agencies provide low-cost and long-term loans and grants to undertake critical wastewater infrastructure projects. A primary goal of the agencies is to ensure that projects remain affordable for communities while safeguarding essential water resources. The following analysis considers State and Federal wastewater programs as listed in Appendix F. Only funding programs that Nelsonville is eligible for and could take actions to be competitive are summarized below. The remaining programs listed in Appendix F have been evaluated and based on the economic characteristics, project characteristics, and need of the project have been determined not to warrant further review at this time.

6.1 New York State Funding

6.1.1 NYS EFC Clean Water State Revolving Fund (CWSRF)

The Village of Nelsonville has the following economic characteristics that are used to evaluate grant and loan opportunities for the NYS Environmental Facilities Corporation (NYS EFC).

Table 6-1:
Nelsonville Economic Characteristics

2021 American Community Survey - 5-Year Estimates			
Community	**Median Household Income (MHI) ($)**	**Total Estimated Population**	**Family Poverty (%)**
Project Area	Unknown – Income Survey Required		
Village of Nelsonville	$113,333	682	1.7
Putnam County	$111,617	97,960	3.7
Regionally Adjusted MHI	$98,456		

NYS EFC also evaluates if the project benefits residents of a Potential Environmental Justice Area (PEJA) or a Disadvantaged Community (DAC). Based on review of the DEC InfoLocator on September 28th, 2023, the Village of Nelsonville does not contain any PEJA nor DAC areas. The Village of Nelsonville Median Household Income (MHI) is greater than the NYS EFC Regionally Adjusted MHI, as such, it is anticipated that the proposed project would be eligible for market rate financing from Environmental Facilities Corporation and may be considered for the following program grants.

The proposed project is an eligible project type for the EFC CWSRF loan program under the project type: Publicly owned treatment works project including collector, trunk, and interceptor sewers. The completed study is anticipated to be submitted to EFC for evaluation and scoring on the NYS EFC Intended Use Plan Priority Projects List (IUP). Listing on the IUP is required to receive CWSRF Financing. Short-term financing provides funding to plan,

design, and construct the project. The interest rate for financing is determined by a project's score and ran on the IUP. Based on the community and project characteristics, it is anticipated that the project would be eligible for short-term market rate financing. The market rate is set by EFC and would include a Municipal Market Demand AAA rate plus issuance costs. The amount of the loan is anticipated to be the eligible project costs as listed on the IUP.

Long-term financing has a term of up to forty years, the eligible rate is market rate based on EFC's bond rating. Long-term financing is entered after construction is completed. A one-time fee of 1% for financing is required.

6.1.1.1 EFC Scoring Criteria

The attached CWSRF Scoring Criteria were evaluated for the project.

- Existing Source Criterion

  Evaluate the source of pollution associated with the impairment of use which may be resolved by the project. The project area contributes to Foundry Brook and tributaries (PWL ID: 1301-0177). This waterbody is classified as a Class A(T) with No Known Impact, with No Use Impairment (2002). As such, the Existing Source Criterion is anticipated to receive **10/50 points.**

- Water Quality Improvement Criterion

  Based on the DEC reported water quality of the waterbody in the project area. Unlikely to change.

  $$WQIC = CPF\ x\ IF\ x\ IPF$$
  $$WQIC = 6\ x\ 2\ x\ 1$$
  $$WQIC = 12$$

  Criterion is anticipated to receive **12/192 points.**

- Consistency with Management Plan Criteria – Hudson River Estuary Plan

  The Hudson Valley Natural Resource Mapper indicates that the project lies within an Important Area for Terrestrial Animals, Known Important Area for Aquatic Animals, Important Bat Foraging Area, Important Area for Migratory Fish, Significant Biodiversity Area – Hudson Highlands East, and Scenic Area Hudson Highlands. The Hudson River Estuary Wildlife and Habitat Conservation Framework includes measures to protect the region, including "Patterns of land use development can significantly affect biodiversity. As the region continues to develop, land-use management that considers biodiversity conservation should be encouraged." Key conservation issues include: "Pollution and disruption of habitats that threatens wildlife and human health." The proposed project addresses a priority water quality problem. The project is anticipated to receive **10/15 points**.

- Intergovernmental Needs

  The Village does not have an existing wastewater treatment SPDES, and the project does not include land acquisition or abatement for an executed enforcement instrument.

  Criterion is anticipated to receive **0/25 points**.

- Construction Start

  As the project has not commenced construction.

  Criterion is anticipated to receive **0/5 points**.

- Financial Need Criterion

  Based on MHI of Village, an income survey of the project area could result in a MHI less than the regionally adjusted MHI and enable additional points in this category.

  Criterion is anticipated to receive **0/5 points**.

- Economic Need Criterion

  Project area is not classified as Empire Zone.

  Criterion is anticipated to receive **0/5 points**.

- TOTAL CWSRF Score anticipated to be approximately 32 points – this falls below the subsidy line and anticipated to receive market rate financing.

6.1.2 NYS EFC Water Infrastructure Improvement Act (WIIA)

The EFC offered $425 million in grants for clean and drinking water projects during the 2023-2024 state fiscal year to selected municipalities with infrastructure projects that protect public health and/or improve water quality. The next funding round is anticipated in June 2024. In order to receive FFY 2024 funds, the project must be listed on the IUP. Readiness for the application includes the following components:

- Completion of Preliminary Engineering Report
- Completion of SEQR FEAF with Coordinated Review
- SHPO Determination
- Bond Resolution
- Board Resolution
- EFC Financing Application
- District Formation is not required, but must identify the plan and schedule
- Grant up to $25,000,000 or 25% of eligible project costs whichever is less
- Application anticipated June 2024
- Grant Summary (ny.gov)

6.1.3 NYS EFC Inter-Municipal Grant (IMG)

Projects that are conducted by cooperating municipalities may be eligible for an IMG grant. The project must serve multiple municipalities, be a shared project such as more than one municipality undertaking a capital improvement project jointly for shared water quality infrastructure. The municipalities must have an Intermunicipal Agreement related to financing of the IMG project that describes the proposed project, the role of each municipality, and the

costs attributable to each municipality. The municipalities must designate a lead municipality that applies for the grant. The program requires the following action:

- Completion of Preliminary Engineering Report
- Completion of SEQR FEAF with Coordinated Review
- SHPO Determination
- Bond Resolution
- Board Resolution
- EFC Financing Application
- District Formation is not required, but must identify the plan and schedule
- Intermunicipal Agreement
- Grant up to $30,000,000 or 40% of eligible project costs whichever is less
- Application anticipated June 2024
- Grant Summary (ny.gov)

6.1.4 NYS DEC Water Quality Improvement Project (WQIP)

The Water Quality Improvement Project grant is a competitive statewide reimbursement grant program, the 2023 program year made available $75 million. The program prioritizes projects that directly improve water quality. Funding is for eligible construction costs only. The project aligns with the project type: Wastewater Treatment Improvement Municipal Systems to Serve Multiple Properties with Inadequate On-site Septic Systems or the General Wastewater Project.

The WQIP scores applications based on protection of water quality. The primary waterbody to be protected in the project is Foundry Brook and tributaries, PWL ID: 1301-0177. The waterbody is a Class A(T), best usage as drinking source and supports a trout population. The Waterbody Inventory states No Known Impact, no use impairments are listed. However, as shown in Appendix A this data was obtained in 2002, additional testing should be requested.

6.1.4.1 Municipal Systems to Serve Multiple Properties with Inadequate On-site Septic Systems

This WQIP project subtype is a tertiary priority project, eligible for 30/40 of the Performance Measure points. The program requires that the project reduce nutrients or fecal indicator bacteria documented in the WI/PWL segment factsheet or the need for the project must be documented in a completed sanitary survey approved by the Department of Health. **As the WI/PWL does not indicate that the waterbody is impaired or precluded, documentation of a sanitary survey is required to be eligible for this program type.**

- "Municipal systems to serve multiple properties with inadequate on-site septic systems that will reduce nutrients or fecal indicator bacteria documented in the WI/PWL segment factsheet as causing the waterbody's best use(s) to be assessed as "impaired" or "precluded"; or that are listed in a DEC-approved watershed implementation plan (i.e., TMDL, Nine Element Watershed Plan, DEC Action

Agenda, or DEC HABs Action Plan); or have a completed sanitary survey conducted and/or approved by the Department of Health"

- Readiness includes completion of SEQR
- District Formation is encouraged, but not required at time of application
- Grant up to $10,000,000 for construction costs
- Match is 25% of grant award – must be assigned to construction costs
- Application due with the NYS Consolidated Funding Application anticipated in July of each year
- Water Quality Improvement Project (WQIP) Program Overview 2023 (ny.gov)

6.1.4.2 General Wastewater Projects

This WQIP project subtype is not a priority project type, eligible for 5/40 of the Performance Measure points. As the grant program is highly competitive, it is unlikely that a project in this category would receive a grant award. The program grant requirements are the same as above.

- General Wastewater Projects
  - Readiness includes completion of SEQR
  - District Formation is encouraged, but not required at time of application
  - Grant up to $10,000,000 for construction costs
  - Match is 25% of grant award – must be assigned to construction costs
  - Application due with the NYS Consolidated Funding Application anticipated in July of each year
  - Water Quality Improvement Project (WQIP) Program Overview 2023 (ny.gov)

6.1.5 NYS Empire State Development Grant Funds (ESD)

Projects that include documented capital-based economic development initiatives intended to create or retain jobs; prevent, reduce, or eliminate unemployment and underemployment; and/or increase business activity in a community or region are eligible for ESD Grant Funds. Demonstration of economic benefit and jobs created/retained is required. The program includes the following components:

- Economic analysis required
- Grant Award up to 20% of Project Costs
- Requires 10% Cash Equity
- Application anticipated June 2024
- Regional Council Capital Fund Program (ESD Grants – REDC) | Empire State Development (ny.gov)

6.2 Federal Funding

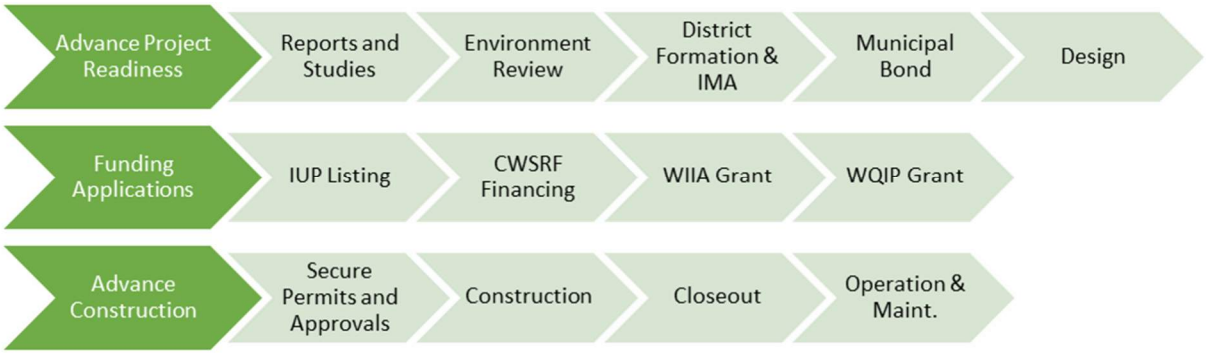
The Federal funding programs listed in Appendix F have requirements to be a distressed community or have a poverty level median household income. The Village of Nelsonville does not qualify for USDA RD Grant funds, nor Economic Development Administration Public Works grant funds.

New York administers Bipartisan Infrastructure Law funds under the CWSRF BIL General Supplemental Funding. Requirements to be eligible for BIL funds include that applicants must qualify for hardship, which is based on municipal population, median household income and percentage of families below the poverty level or whether the project serves, protects, and benefits residents of a potential Environmental Justice Area or Disadvantaged Community. The Village of Nelsonville does not qualify for hardship under these criteria, **an income survey could be completed to evaluate the project area and determine eligibility.**

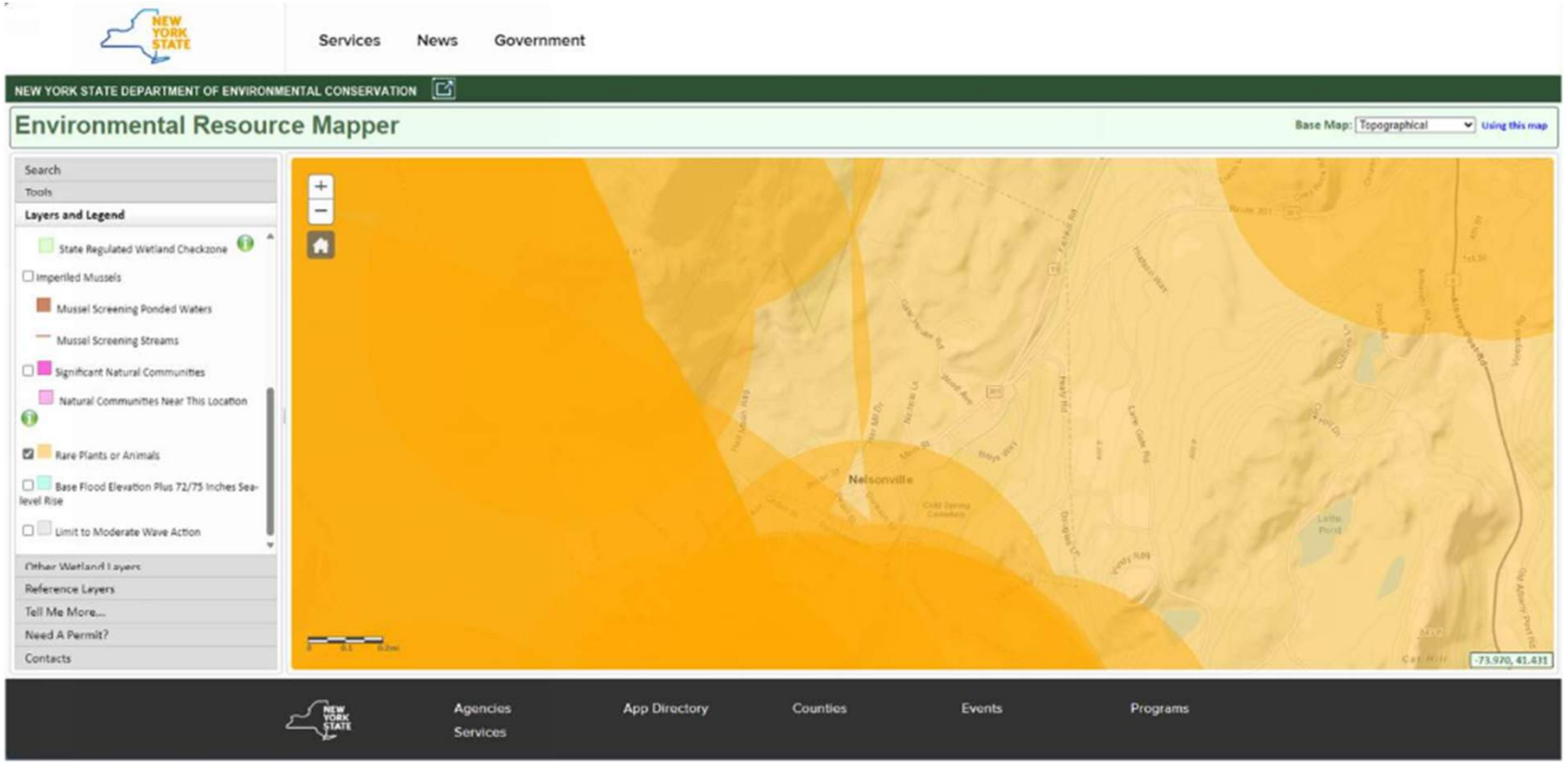
6.3 Summary

Due to the economic characteristics, lack of identified disadvantaged communities, and high quality of the primary waterway, Foundry Creek, the proposed project is eligible for the above programs but is not anticipated to score in the highest percentiles and may not receive grant awards, to increase scoring the Village can consider completing an Income Survey of the project area and a DOH approved Sanitary Survey of the project area. The project is eligible for WIIA grant funds, scoring for this program is not published and the recent annual allocation of funds has been significant. It is recommended to prepare for a WIIA grant through the process above, beginning with advancing project readiness with the following Reports and Studies: 1) Preliminary Engineering Report (required), 2) Sanitary Survey (recommended), 3) Income Survey (recommended). Project readiness would then require Environmental Review, District Formation, and Bond prior to a WIIA grant application.

The NYS EFC short and long-term financing is recommended for consideration. The required actions to prepare for loan financing are similar to the grant applications, and as such, it is recommended that the following plan be pursued:



Appendix A:
Environmental Resource Maps

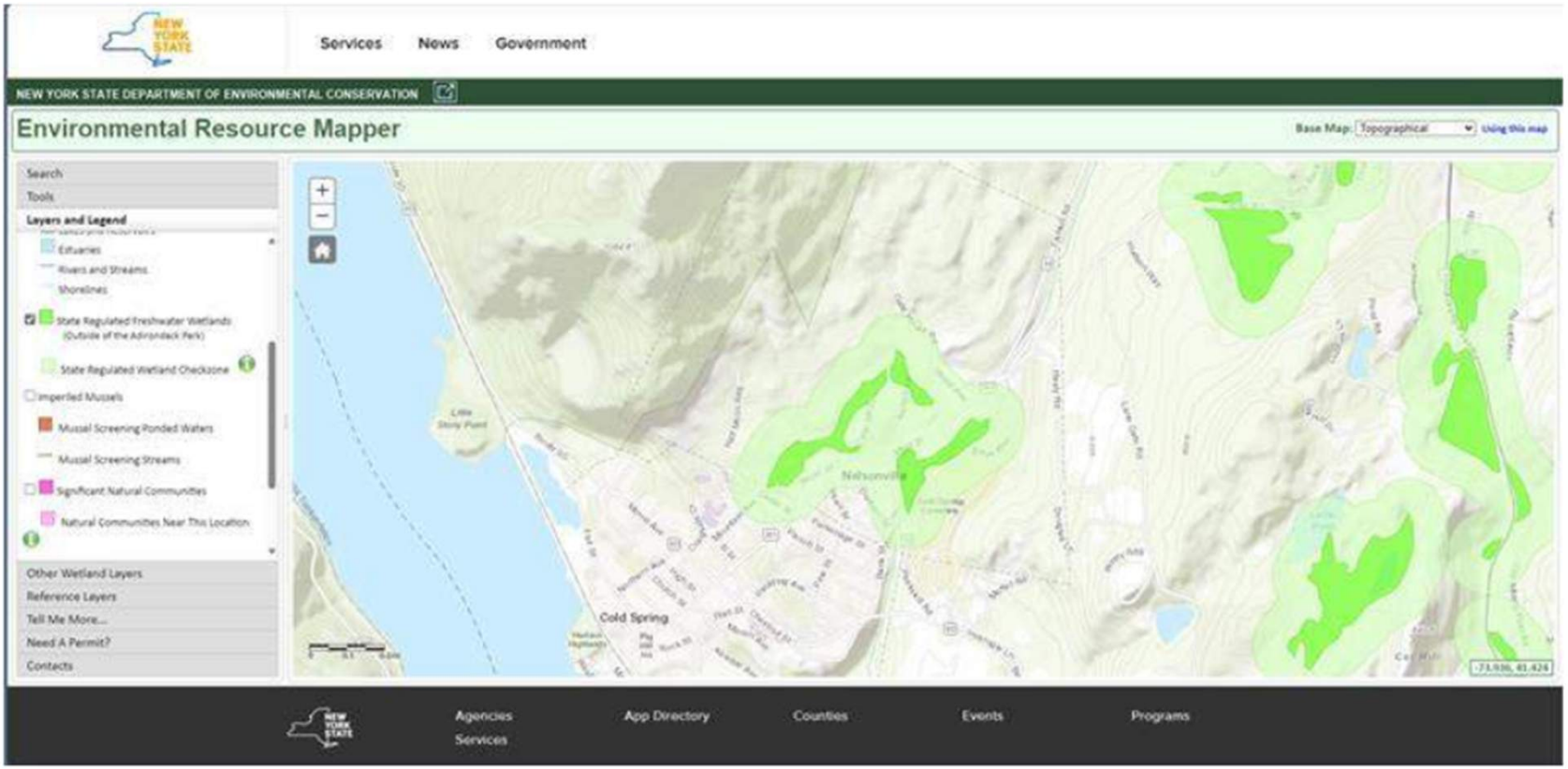


Environmental Resource Mapper

Figure A.1

Village of Nelsonville Sanitary Sewer Collection System
Feasibility and Funding Study

LaBella
Powered by partnership.



Environmental Resource Mapper –
Regulated Wetlands

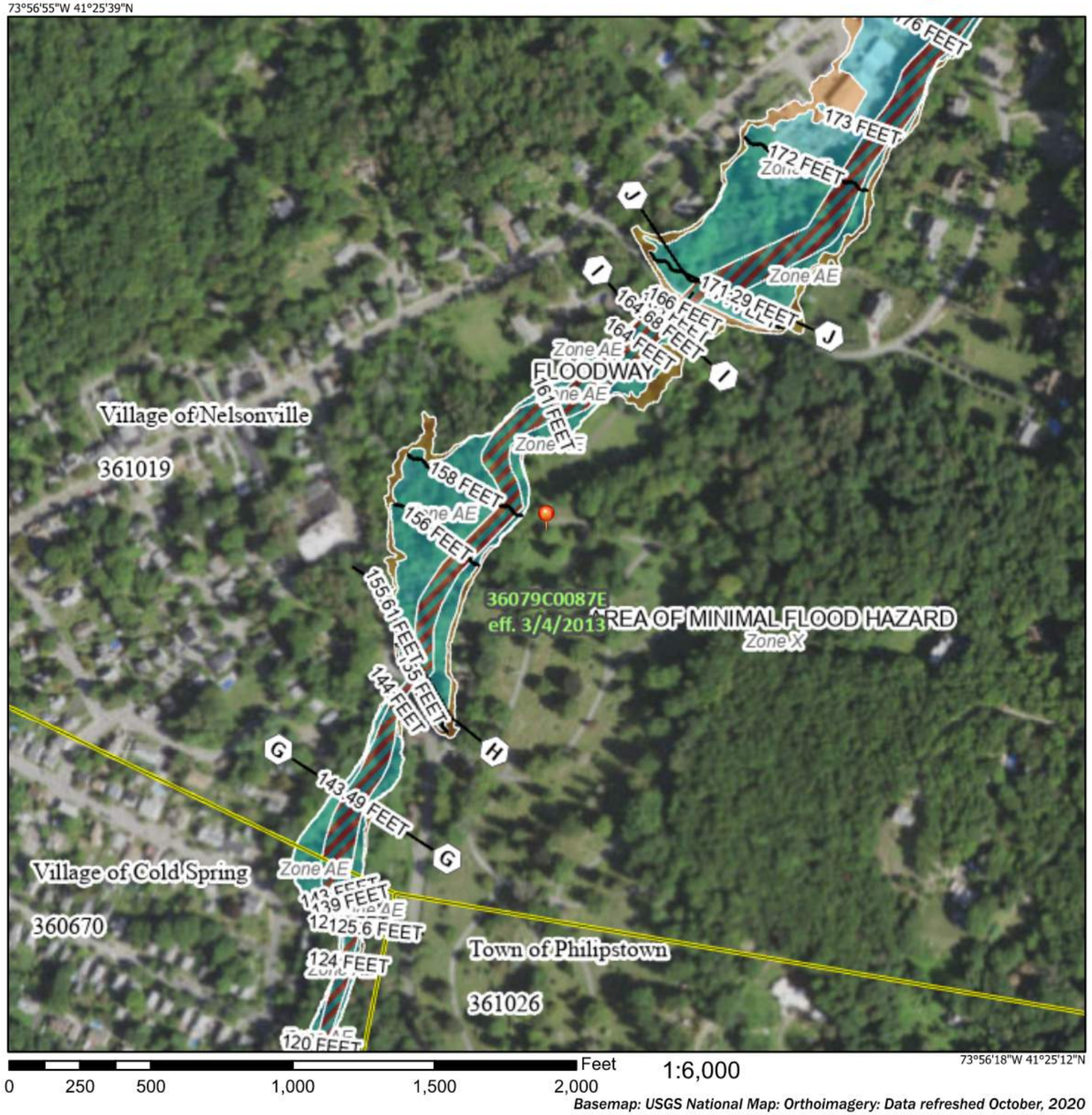
Figure A.2

Village of Nelsonville Sanitary Sewer
Collection System
Feasibility and Funding Study

LaBella
Powered by partnership.

Appendix B:
National Flood Insurance Program Flood Insurance Rate Maps

National Flood Hazard Layer FIRMette



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/26/2023 at 2:09 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Flood Insurance Rate Map

Figure B.1

Village of Nelsonville Sanitary Sewer Collection System
Feasibility and Funding Study

LaBella
Powered by partnership.

National Flood Hazard Layer FIRMette

FEMA

73°56'37"W 41°25'59"N

73°56'W 41°25'32"N

Feet 1:6,000

0 250 500 1,000 1,500 2,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/26/2023 at 2:09 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Flood Insurance Rate Map

Figure B.2

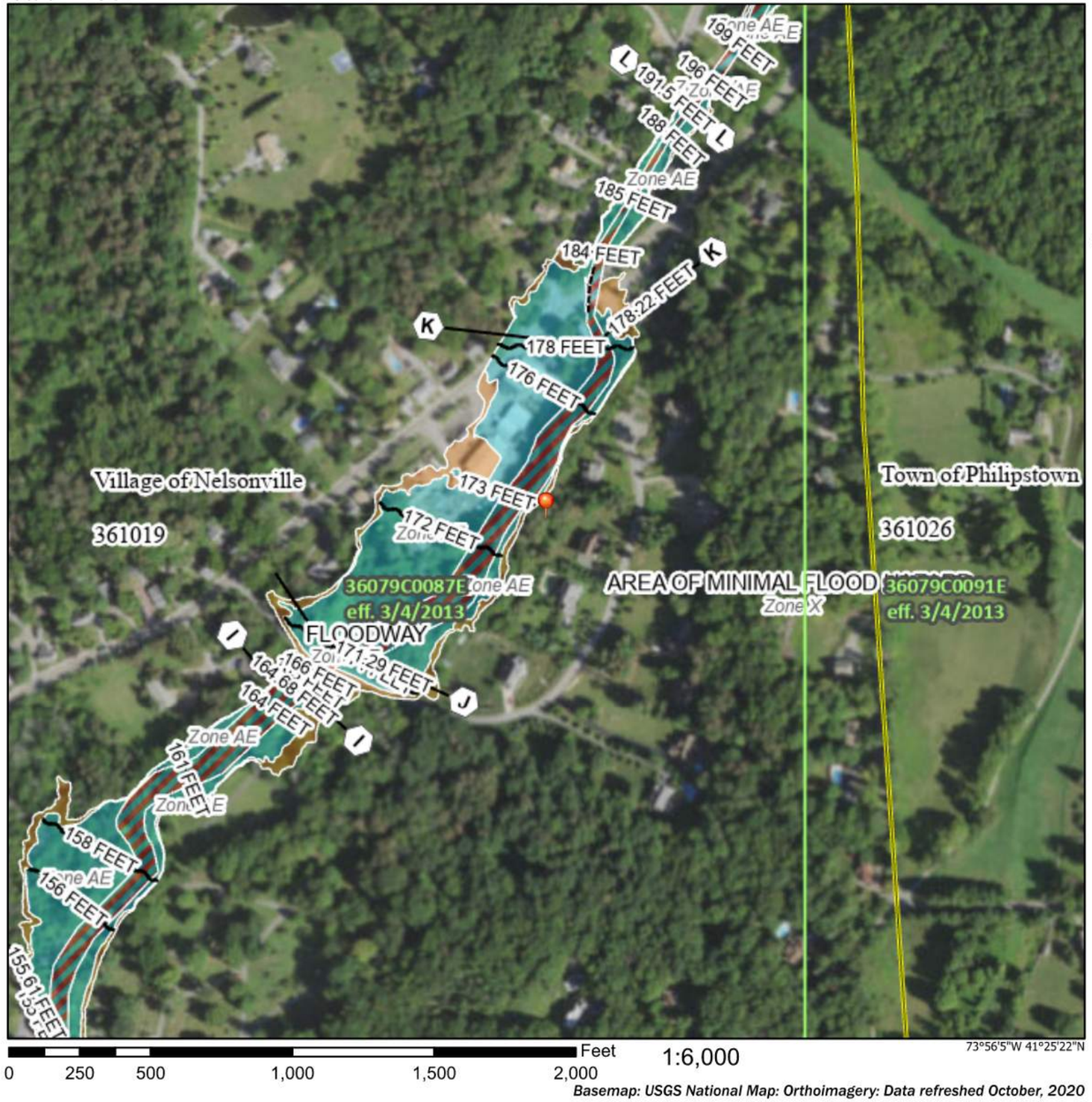
Village of Nelsonville Sanitary Sewer Collection System
Feasibility and Funding Study

LaBella
Powered by partnership.

National Flood Hazard Layer FIRMette

FEMA

73°56'43"W 41°25'49"N



Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 — Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

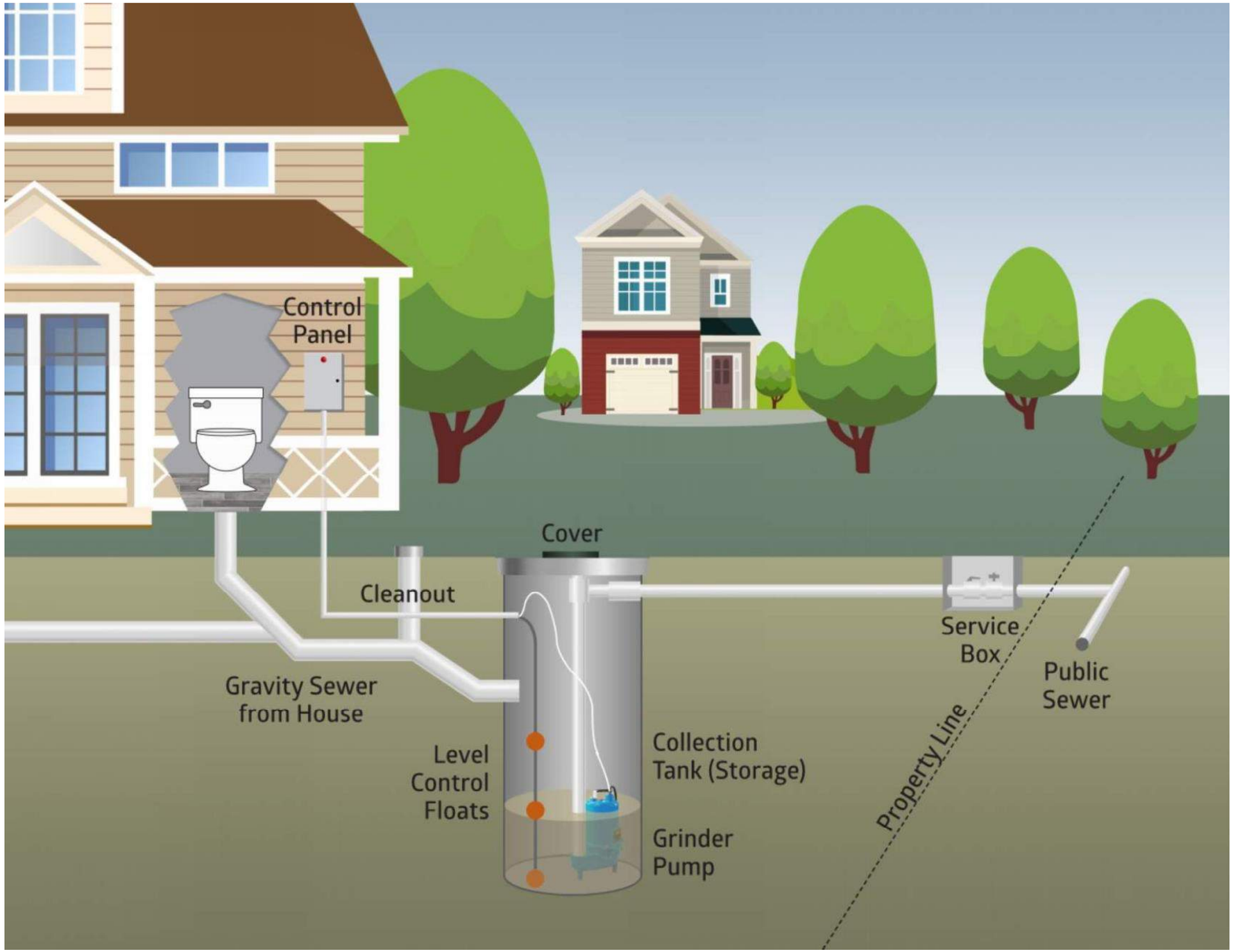
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/26/2023 at 2:08 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Flood Insurance Rate Map

Figure B.3

Appendix C: Basic Schematic of a Low-Pressure Sewer System



Individual Grinder Layout

Figure C.1

Village of Nelsonville Sanitary Sewer Collection System
Feasibility and Funding Study

LaBella
Powered by partnership.